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forces acting upon it are different from those which affect the mature form; and thus changes are produced in the young which have reference to its immediate wants, rather than to its final form.

3rd. That metamorphoses may therefore be divided into two kinds, developmental and adaptational.

4th. The apparent abruptness of the changes which insects undergo arises in great measure from the hardness of their skin, which permits no gradual alteration of form, and which is itself necessary in order to afford sufficient support to the muscles.

5th. The immobility of the pupa or chrysalis depends on the rapidity of the changes going on in it.

6th. Although the majority of insects go through three well-marked stages after leaving the egg, still a large number arrive at maturity through a somewhat indefinite number of slight changes.

7th. When the external organs arrive at this final form before the organs of reproduction are matured, these changes are known as metamorphoses; when, on the contrary, the organs of reproduction are functionally perfect before the external organs, or when the creature has the power of budding, then the phenomenon is known as alternation of generations.

Insects present every gradation, from simple growth to alternation of generations.

8th. Thus, then, it appears probable that this remarkable phenomenon may have arisen from the simple circumstance that certain animals leave the egg at a very early stage of development, and that the external forces acting on the young are different from those which affect the mature form.

9th. The dimorphism thus produced differs in many important respects from the dimorphism of the mature form which we find, for instance, in ants and bees; it would therefore be convenient to distinguish it by a different name; and I have ventured to suggest the terms Dieidism and Polyeidism.

The same considerations explain the remarkable fact that in alternation of generations the reproduction is agamic in the one form. This is because impregnation requires the perfection both of external and internal organs; and if the phenomenon arises, as has just been suggested, from the fact that the internal organs arrive at maturity before the external ones, impregnation cannot take place, and reproduction will only result in those species which have the power of agamic multiplication.

REVISION OF THE FOSSIL HYMENOPTERA OF NORTH AMERICA. *I. Crabronidæ and Nyssonidæ.* By *A. S. Packard, Jr., M. D.* From the Proceedings of the Entomological Society. Philadelphia, 1866-67. pp. 167. 8vo.

This work treats of the classification of a large group of the fossorial or digging wasps. It contains descriptions of nearly all the genera and species known to inhabit North America. The species, as well as the genera of the digging wasps, are difficult to identify; but with the detailed descriptions of the genera here given, and the synoptical table of the species, the work of identification has been rendered comparatively easy. The names of species not seen by the author are added, so that it gives a complete list of all the known species, which amount to two hundred and seven, comprised in twenty-five genera, of which one new genus and fifty-eight new species are described. The family characters are discussed at length, and there are a few introductory pages devoted to the general classification of the group, their zoölogical characters, and geographical distribution.